

COPY

REMARKS

This is in response to the Official Action currently outstanding with regard to the above-identified application, which Official Action the Examiner has designated as being FINAL.

Claims 1-23 were pending at the time of the issuance of the currently outstanding FINAL Official Action in the above-identified application. Claims 16-23 have been withdrawn from further consideration in the above-identified application in view of Applicant's response to a previous election/restriction requirement. By the foregoing Amendment, Applicant respectfully requests that Claims 1-9 and 15 be amended further for clarity in view of the Examiner's citation of the Jinnai reference. No claims have been cancelled, added or withdrawn by the foregoing Amendment. Accordingly, in the event that the Examiner grants the entry of the foregoing Amendment, Applicants respectfully submit that Claims 1-15 as hereinabove amended so as to constitute the claims under active prosecution in this application will be in condition for allowance, or at least in better form for Appeal, as required by 37 CFR 1.116.

The Claims of this application are reproduced above with appropriate status identifiers and showing the changes being proposed by the Applicant as required by the Rules.

More particularly, in the currently outstanding non-final Official Action:

1. Not re-acknowledged Applicants' claim for foreign priority under 35 USC §119 (a)-(d) or (f), and reconfirmed the receipt by the United States Patent and Trademark Office of the required copies of the priority documents for this application. – **Applicant respectfully notes that the Examiner provided it with such acknowledgement and confirmation in the Official Action dated 29 May 2008.**

COPY

2. Not reconfirmed that the drawings as filed with this application on 7 February 2006 have been accepted. - **Applicant respectfully notes that the Examiner provided it with such acknowledgement in the Official Action dated 29 May 2008.**
3. Provided Applicant with a Notice of references cited that lists references cited by the Examiner.
4. Acknowledged his receipt and consideration of Applicant's Information Disclosure Statement as filed on 29 May 2008 by providing Applicant with copies of the Forms PTO/SB/08a/b that accompanied that Statement duly electronically signed, dated and initialed by the Examiner in confirmation of that consideration. – **Similar consideration of the art provided with Applicants' Information Disclosure Statement of 19 February 2009 in response to this communication is respectfully requested.**
5. Rejected Claims 1-10, 12 and 15 as being unpatentable under 35 USC 103(a) over Peeters et al (US Patent No. 6,340,216) in view of Lin et al (US Patent No. 6,238,393) and Jinnai (US Patent No. 4,328,505).
6. Rejected Claims 11, 13 and 14 under 35 USC 103(a) as being unpatentable over Peeters in view of Lin et al further in view of Ohno et al (US Patent No. 6,096,468).

Further comment regarding items 1-4 above is not deemed to be required in these Remarks.

With respect to items 5 and 6 above, however, Applicant respectfully submits the foregoing clarifying Amendment and the following Remarks in rebuttal of the Examiner's current position particularly as it applies to the Jinnai reference. In particular, by the foregoing Amendment, Applicant respectfully calls the Examiner's attention to the fact that the claims of this application have been directly or indirectly amended by the foregoing Amendment so as to positively recite that the present invention is directed to positively and negatively charged fluidic droplets that are alternately landed on the discharge target. Furthermore, Applicant respectfully submits that the Examiner has misapprehended the teachings of the Jinnai reference in this regard and that once the teachings of that reference are correctly understood by the Examiner, h will agree that the present application is in condition for allowance *vis a vis* the art currently of record in the present proceeding.

In view of the foregoing, Applicant respectfully traverses the reasoning stated by the Examiner in support of his currently outstanding FINAL rejection for the following reasons.

The Examiner's characterization of the Jinnai reference appears to be best summarized at page 3, last paragraph, of the currently outstanding Official Action wherein the Examiner states that:

Jinnai teaches the drive voltage supply means outputting, as a drive voltage, a bipolar pulse voltage which has a frequency of not less than 1 Hz, and which alternates between positive and negative such that a positively charged fluid and a negatively charged fluid are alternately discharged in accordance with a polarity of the bipolar pulse voltage applied as the drive voltage (Jinnai: 4,328,505, Fig. 1: showing the print signal generator [drive voltage supply means] 14 outputting an alternating electric drive signal [bipolar pulse voltage] which has a frequency of not less than 1 Hz, and which varies and locks phases of the drive signal generator and charging signal [such that a positively charged fluid and a negatively charged fluid are alternately discharged in accordance with the polarity of the bipolar pulse voltage applied as the drive voltage]; see col. 1, lines 37-61) (Peeters et al: col. 20. Table 2; disclosing AC drive frequency a 2 kHz).

In other words, the Examiner appears to reject the present application based mainly upon the proposition that Jinnai discloses a charging signal generator means for applying an alternating electrical charge signal to the charging electrode for charging the droplets as stated by Jinnai in Col. 1, lines 37-61). Applicant respectfully submits, however, that the Examiner's reading of the Jinnai reference fails to take into account the paragraph following that upon which he has relied. Thus, at Jinnai Col. 1, line 62 to Column 2, line 10, it is stated that:

In accordance with the present invention, an alternating drive signal is applied to an ink ejection head to cause a jet of ink to be ejected which separates into droplets at a certain position. A charging electrode is provided at this position to charge the droplets where it is desired to print a dot. **Charged droplets are deflected by deflection electrodes to hit a sheet of paper for printing whereas uncharged droplets hit a gutter.** The sheet is moved relative to the ejection head for scanning. The phases of the driving signal and an alternating charging signal applied to the charging electrode are continuously varied between limit values. The phase of the charging signal is locked when the sheet reaches the prescan position. The phase of the drive signal is locked when a charged condition of the droplets is detected. This ensures that adjacent scan lines will not be displaced from each other in the scan direction

COPY

Applicant respectfully submit that the foregoing passage from the Jinnai reference is indicative of the fact that Jinnai contemplates that the ink 28 is separated into droplets at the charging electrode 16 and that the ink is at that point selectively charged from the print signal generator 14 in accordance with the print data signal. Hence, the result is a series of charged and uncharged (neutral electrically) droplets 29 wherein the charged droplets are discharged and deflected by the electrodes 18 and 19 while the uncharged (neutral) droplets are collected in the gutter 21. (See also, Jinnai at Col. 2, lines 54-62).

Furthermore, it is described at Column 3, lines 53-58 and Fig. 3 of the Jinnai reference that an example of the alternating charging signal is the signal F that is used to separate the ink into droplets and to selectively charge the droplets. In this regard, the descriptions contained in the Jinnai specification are respectfully submitted to clearly indicate that the alternating charge signal (i.e., the signal F in Fig. 3) is used to selectively charge the droplet or not to charge the droplet (i.e., to leave the droplet uncharged). In addition, it appears clear from those descriptions that those droplets that are charged are all charged with the same polarity, not different polarities.

For these reasons, Applicant respectfully submits that the so-called alternating charge signal of the Jinnai reference is not a signal that alternates between the positive and the negative. In Jinnai, the alternating signals vary between a set electrical polarity and no electrical polarity and therefore cannot correctly be referred to as bipolar signals in the common sense of the latter terminology. Therefore, unlike the present invention as now specifically requested to be claimed, the present invention creates positively and negatively charged droplets alternately that are alternately landed on the discharge target, the Jinnai reference at best charges only one-half of the generated droplets (every other one) and lands only those charged droplets on the target while disposing of the remainder. Applicant respectfully submits that the latter teachings do not teach, disclose or suggest the former.

COPY

In addition, Applicant respectfully submits that it should be noted that the Jinnai reference describes that an electronic vibrator 13 is used to vibrate the ink present in the ink ejection head 11 so as to cause the same to be ejected via the orifice 12. Clearly this is distinct from, and does not teach, disclose or suggest an electrostatic suction type fluid discharge which is the subject matter of the present application and claims.

Finally, Applicant respectfully submits that it should be noted that the Jinnai reference charges the droplets that he actually charges with the electrode 16 and deflects those charged droplets with the deflecting electrodes 18 and 19 (which are not disclosed as changing polarity with respect to one another, so as to control the location of ink dots on a recording sheet. Applicants believe that this too is different from the object of the present invention of "restraining the charge up of the insulating substrate".

Furthermore, Applicant is submitting herewith a copy of JP-56-98172 along with an Information Disclosure Statement. In this regard, Applicants would draw the Examiner's attention to the fact that that document discloses an electrostatic suction type inkjet which charges droplets with a polarity opposite to the voltage applied to the electrode 2 thereof. Fig. 2 and Fig. 3 of that document and the descriptions relative thereto at least suggest that minus charged droplets and plus charged droplets are discharged and merged together during their flight toward the target. Hence, the above cited document is not suggesting directly charging a fluid, but rather charges the discharged droplets in a non-contacting manner. Moreover, it is respectfully submitted not to teach "positively and negatively charged droplets that are alternately discharged and alternately landed on the discharge target as in the present invention.

Consequently, Applicant respectfully submits that in the event that the Examiner grants entry to the foregoing Amendment, the above-identified application will be in condition for allowance, or at the very least in better form for Appeal, as required by 37 CAR 1.116. Accordingly, entry of the foregoing Amendment, reconsideration, and a decision allowing the above-identified application in response to this submission are respectfully requested.

COPY

Finally, Applicant believes that additional fees beyond those submitted herewith are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. 04-1105, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

Date: March 26, 2009

David A. Tucker

SIGNATURE OF PRACTITIONER

Reg. No.: 27,026

David A. Tucker

(type or print name of practitioner)

Attorney for Applicant(s)

Tel. No. (617) 517-5508

Edwards Angell Palmer & Dodge LLP

P.O. Box 55874

P.O. Address

Customer No.: 21874

Boston, MA 02205